

No. 617,862.

Patented Jan. 17, 1899.

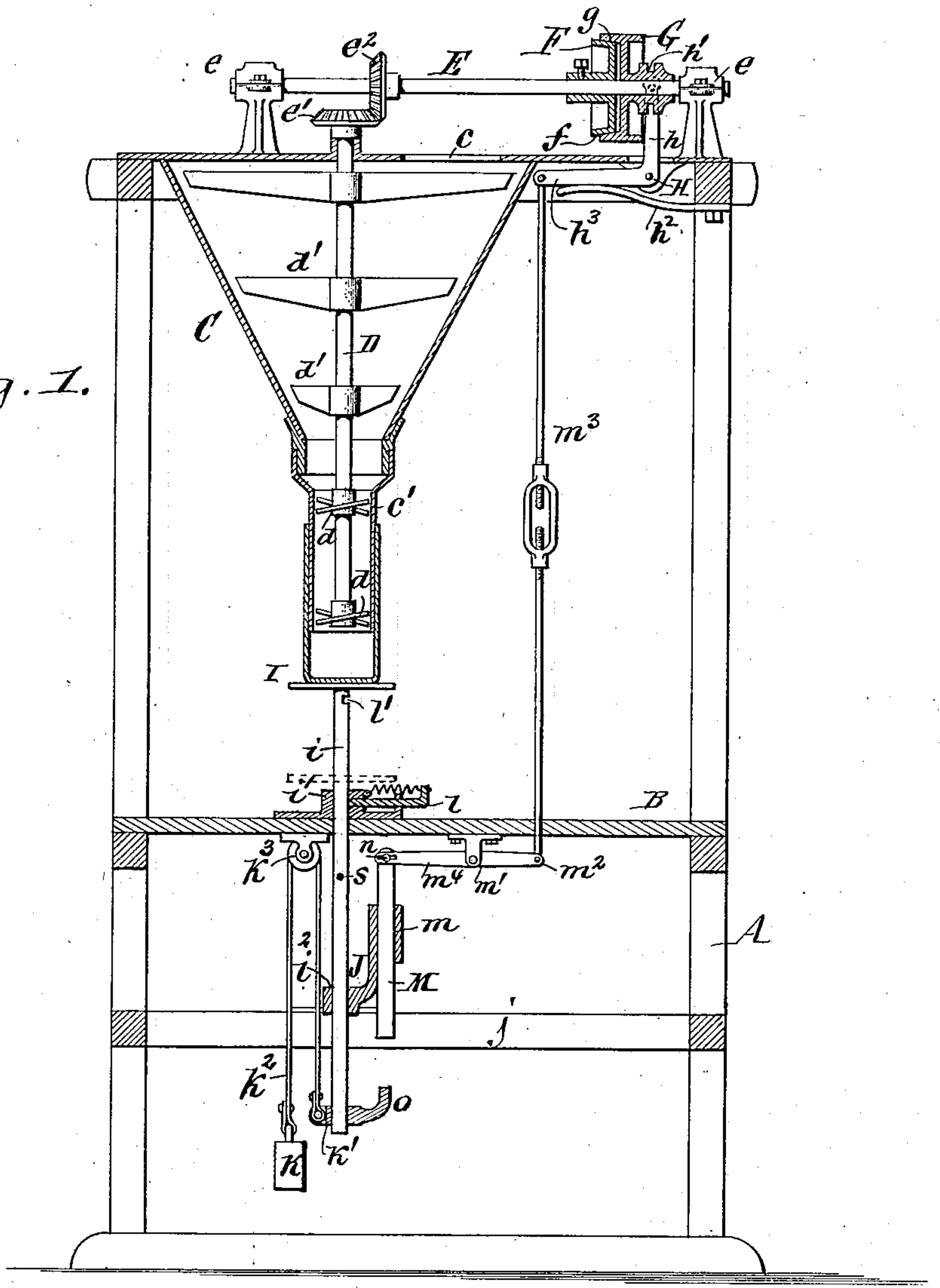
C. S. RIDER.
PACKING MACHINE.

(Application filed Aug. 30, 1897.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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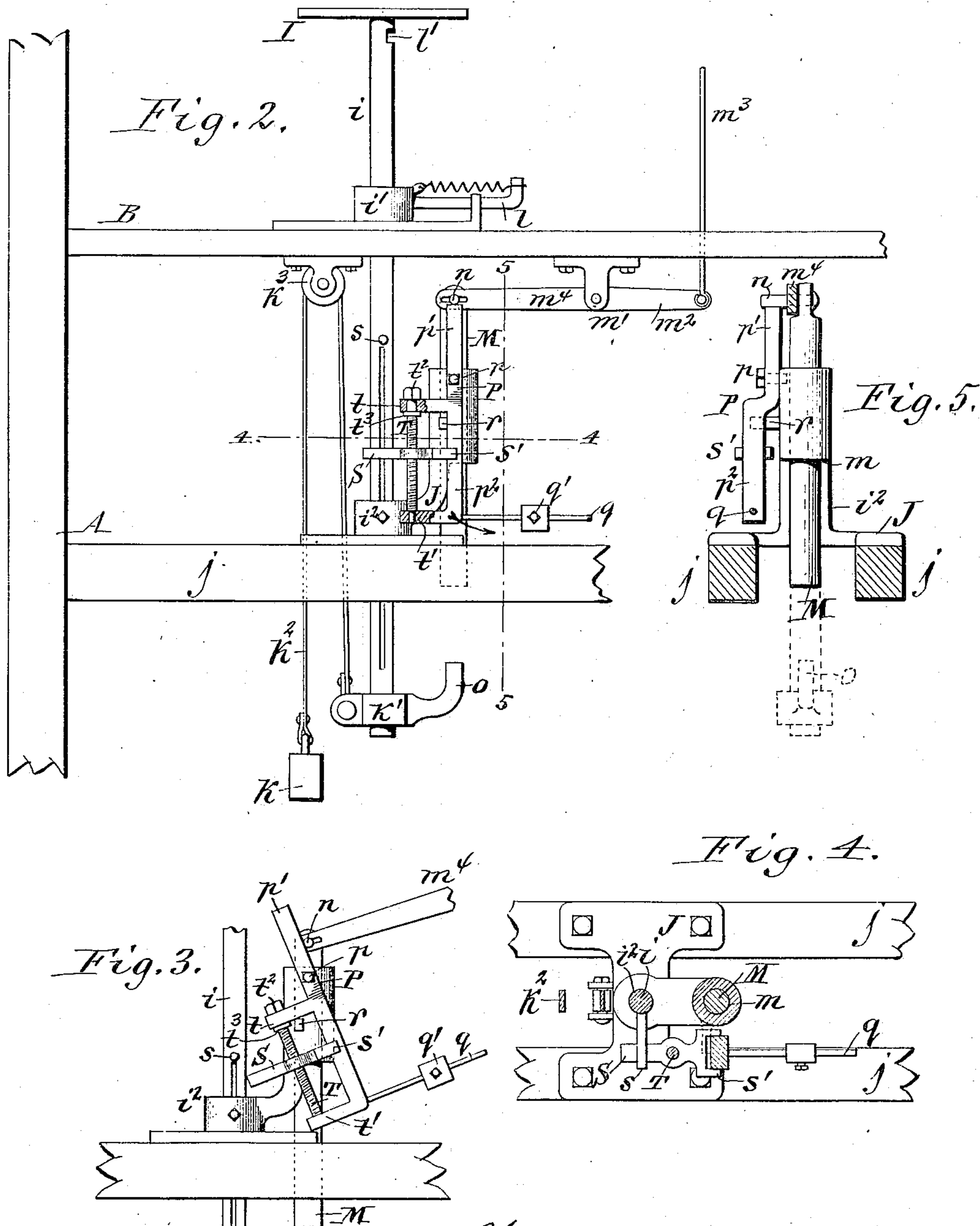
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2 Sheets—Sheet 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES S. RIDER, OF SILVER CREEK, NEW YORK, ASSIGNOR TO THE
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PACKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 617,862, dated January 17, 1899.

Application filed August 30, 1897. Serial No. 649,938. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. RIDER, a citizen of the United States, residing at Silver Creek, in the county of Chautauqua and State of New York, have invented new and useful Improvements in Packing-Machines, of which the following is a specification.

This invention relates to that class of packing-machines which are more especially designed for packing flour and other pulverulent or granular material in small packages.

The object of this invention is to improve and simplify the tripping mechanism for this class of packing-machines, whereby the driving mechanism is reliably thrown into and out of gear during upward and downward movement of the platform.

In the accompanying drawings, consisting of two sheets, Figure 1 is a vertical section of my improved packer. Fig. 2 is a fragmentary side elevation of the tripping mechanism, on an enlarged scale, showing the position of the tripping mechanism during the packing operation. Fig. 3 is a similar view showing the position of the tripping mechanism when the platform has been depressed to its lowest position. Fig. 4 is a horizontal section in line 4 4, Fig. 2. Fig. 5 is a fragmentary vertical section of the tripping mechanism in line 5 5, Fig. 2.

Like letters of reference refer to like parts in the several figures.

A represents the main frame of the packing-machine, and B the horizontal table, arranged in the lower portion of the frame.

C represents the supply hopper or bin, mounted on the upper portion of the frame and provided in its top with an inlet-opening *c* and at the outlet in its lower end with a filling-tube *c'*.

D represents the feed-shaft, arranged vertically in the filling-tube and the hopper and provided within the tube with augers *d* and within the hopper with stirrers *d'*. This shaft is driven from a horizontal driving-shaft E, journaled in bearings *e* on the frame above the hopper by intermeshing bevel gear-wheels *e'* *e''*, secured to said shafts.

F is a clutch-wheel secured to the driving-shaft and provided with an external annular friction-face *f*.

G is a constantly-rotating clutch or driving pulley which is capable of rotary and longitudinal movement on the driving-shaft and which is provided with an internal annular friction-face *g*, which is adapted to be engaged with or disengaged from the friction-face of the clutch-wheel for operating the feed device or stopping the same. The longitudinal movement of the pulley is effected by an elbow-lever H, pivoted to the frame and having its upright arm *h* provided with a pin which engages with a groove *h'* in the hub of the clutch-pulley. The elbow-lever is turned in the direction for disengaging the clutch-pulley from the clutch-wheel by a spring *h''*, secured to the frame and bearing against the horizontal arm *h'''* of the elbow-lever.

I represents the vertically-movable platform which supports the package to be filled and which is arranged on the upper end of a vertically-reciprocating lifting rod or bar *i*. The latter slides in an upper guide *i'*, which is secured to the top of the table, and a lower guide *i''*, which is formed on a bracket J, arranged below the table and secured to cross-bars *j j* of the frame. The platform when free is raised by a weight *k*, which is connected with a collar *k'* on the lower end of the lifting-rod by a strap, cord, or chain *k''*, passing around a roller *k'''*, supported on the under side of the table. The platform may be held in its lowest position by a spring bolt or catch *l*, which slides transversely in ways on the upper platform-guide and which engages with a notch *l'* in the upper portion of the lifting-rod.

M represents a vertically-movable shifting-rod whereby the driving mechanism is coupled and uncoupled and which slides in a way *m*, arranged on one side of the bracket J.

m' is a rock-lever which is pivoted between its arms to the under side of the table and which is connected with its outer arm *m''* by a rod *m'''* to the horizontal arm *h'''* of the elbow-lever H and with its inner arm *m''''* to the upper end of the shifting-rod by a transverse pin *n*, passing through the rod and a slot in the lever. Upon raising this rod the driving mechanism is coupled with the feed mechanism and the latter is operated, and upon permitting the rod to drop its weight, together

with the tension of the spring h^2 against the elbow-lever H, causes the clutch to be uncoupled. The shifting-rod is raised by a tappet o, arranged on the lower end of the platform-rod and engaging with the lower end of the shifting-rod during the last portion of the upward movement of the platform.

P represents a trip-lever adapted to hold the driving mechanism in gear during the packing operation and to uncouple the driving mechanism for stopping the feeding operation when the package has been filled. This lever is pivoted by a horizontal pin or bolt p to the upper portion of the bracket J and is adapted to stand normally in a vertical position, so that its upper arm p' engages with its end against the underside of the pin n of the shifting-rod, which serves as a shoulder and holds the shifting-rod in an elevated position. The trip-lever tends to swing constantly into its normal operative position by gravity, and this movement is expedited by a rod q, secured to the lower arm p^2 of the trip-lever and provided with an adjustable weight q' .

r is a stop arranged on the bracket J and engaging with the lower arm of the trip-lever when the upper arm thereof stands under the pin n.

S is a trip-arm which is mounted on the trip-lever and which is engaged at its inner end by a trip pin or projection s on the lifting-rod when the package is filled, thereby turning the trip-lever into the direction of the arrow, Fig. 2, and uncoupling the clutch of the driving mechanism. The trip-arm is provided with a screw-threaded opening which receives a vertical adjusting-screw T and with a bifurcated outer ends s' , which embraces the lower arm of the trip-lever and prevents the trip-arm from turning with the adjusting-screw. The latter is journaled in upper and lower bearings t t' on the lower arm of the trip-lever, but it is held against lengthwise movement therein by a head t^2 and shoulder t^3 on the screw bearing against opposite sides of the upper bearing.

The operation, briefly, of my improved packing-machine is as follows: Preparatory to starting the machine the platform is depressed to its lowest position, as shown in dotted lines in Fig. 1, and held there by the spring-bolt l, and the trip-lever is turned into the position shown in Fig. 3, whereby the shifting mechanism uncouples the driving-gear. An empty sack, bag, or other package is now placed around the filling-tube and the spring-bolt is withdrawn to permit the platform to rise and support the package at the bottom. During the last portion of the upward movement of the platform the tappet

on the lifting-rod raises the shifting-rod so high that its pin or shoulder n passes above the upper end of the trip-lever, thereby permitting the latter to automatically swing under the pin and also throwing the clutch so that the augers turn and feed the material from the hopper into the package. As the filling of the package proceeds its weight increases and the platform gradually descends. The tappet is disengaged from the shifting-rod during the descent of the platform, but the shifting-rod is held up by the trip-lever and the driving mechanism remains in gear. When the desired quantity of material has been fed into the package, the platform has descended to such an extent that the trip-pin on the lifting-rod strikes the trip-arm and turns the trip-lever, so as to liberate the shifting-rod and uncouple the driving-gear, thereby stopping the feed of material into the package. The operator now depresses the platform by hand until the spring-bolt engages with the notch in the lifting-rod, whereby the platform is held down for the purpose of replacing the filled package by an empty package, when the operation of filling the latter is repeated, as before described.

I claim as my invention—

The combination with the vertically-movable platform and the rod extending downwardly therefrom, the feed mechanism, the driving mechanism, and the clutch connecting the driving mechanism with the feed mechanism, of a vertical shifting-rod arranged on one side of said platform-rod and provided with a locking projection, a vertical way in which said shifting-rod is guided and in which it can descend by gravity, means whereby said shifting-rod is connected with the clutch, a vertical trip-lever arranged on one side of the shifting-rod and having its upper arm projecting upwardly from its pivot and engaging under the projection of the shifting-rod when the latter is elevated, said trip-lever being provided below its pivot with a trip-arm which is depressed by a trip-pin on the platform-rod at the end of the downward movement of the platform, thereby swinging the upper arm of the trip-lever from under the locking projection of the shifting-rod and releasing the latter, and a tappet on the platform-rod for lifting the shifting-rod and resetting the same and the trip-lever in elevating the platform, substantially as set forth.

Witness my hand this 29th day of July, 1897.

CHARLES S. RIDER.

Witnesses:

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FREDERICK W. THOMAS.